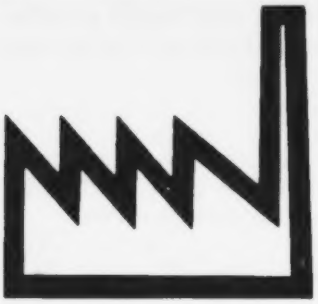
MC 87-I-30A(P)



PRELIMINARY REPORT
INDUSTRY SERIES

1987 Census of Manufactures

MC87-I-30A(P)
Issued July 1989

RUBBER PRODUCTS

Industries 3011, 3021, 3052, 3053, 3061, and 3069

INTRODUCTION

This report presents preliminary statistics from the 1987 Census of Manufactures for those establishments classified in the industries listed above. These data will be superseded by a more comprehensive final paperbound report. The method of data collection and use of administrative data are discussed in detail in the appendix.

All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The definitions of these industries are the same as those used in the 1987 Standard Industrial Classification (SIC) Manual.[1]

INDUSTRY 3011, TIRES AND INNER TUBES

In the 1987 Census of Manufactures, Industry 3011, Tires and Inner Tubes, had employment of 65.4 thousand. The employment figure was 7 percent below the 70.3 thousand reported in 1982.

The total value of shipments for establishments classified in this industry was $10.4 billion.

The cost of materials and services used by establishments in this industry amounted to $4.9 billion in 1987. Data on specific materials consumed appear in table 3.

INDUSTRY 3021, RUBBER AND PLASTICS FOOTWEAR

In the 1987 Census of Manufactures, Industry 3021, Rubber and Plastics and Plastics Footwear, had employment of 11.0 thousand. The employment figure was 38 percent below the 17.6 thousand reported in 1982. Compared with 1986, employment in 1987 increased 20 percent. The 1986 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

The total value of shipments for establishments classified in this industry was $584.8 million.

The cost of materials and services used by establishments in this industry amounted to $270.9 million in 1987. Data on specific materials consumed appear in table 3.

INDUSTRY 3052, RUBBER AND PLASTICS HOSE AND BELTING

In the 1987 Census of Manufactures, Industry 3052, Rubber and Plastics Hose and Belting, had employment of 23.2 thousand. The employment figure was 7 percent below the 24.9 thousand reported in 1982.

The total value of shipments for establishments classified in this industry was $2.3 billion.

The cost of materials and services used by establishments in this industry amounted to $1.0 billion in 1987. Data on specific materials consumed appear in table 3.

INDUSTRY 3053, GASKETS, PACKING, AND SEALING DEVICES

In the 1987 Census of Manufactures, Industry 3053, Gaskets, Packing, and Sealing Devices, had employment of 30.1 thousand. The employment figure was 1 percent below the 30.3 thousand reported in 1982.

[1] **Standard Industrial Classification Manual: 1987.** For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. Stock No. 041-001-00314-2.

Address inquiries to Bureau of the Census, Industry Division, Washington, DC 20233, or call **Laurie Perper** (301) 763-7304.

U.S. Department of Commerce
BUREAU OF THE CENSUS

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The total value of shipments for establishments classified in this industry was $2.5 billion.

The cost of materials and services used by establishments in this industry amounted to $1.0 billion in 1987. Data on specific materials consumed appear in table 3.

INDUSTRY 3061, MOLDED, EXTRUDED, AND LATHE CUT RUBBER MECHANICAL GOODS

In the 1987 Census of Manufactures, Industry 3061, Molded, Extruded, and Lathe Cut Rubber Mechanical Goods, had employment of 44.8 thousand.

The total value of shipments for establishments classified in this industry was $3.6 billion.

The cost of materials and services used by establishments in this industry amounted to $1.6 billion in 1987. Data on specific materials consumed appear in table 3.

INDUSTRY 3069, FABRICATED RUBBER PRODUCTS, N.E.C.

In the 1987 Census of Manufactures, Industry 3069, Fabricated Rubber Products, N.E.C., had employment of 56.0 thousand.

The total value of shipments for establishments classified in this industry was $5.4 billion.

The cost of materials and services used by establishments in this industry amounted to $2.7 billion in 1987. Data on specific materials consumed appear in table 3.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used in the tables in this publication:

-	Represents zero.
(D)	Withheld to avoid disclosing data for individual companies; data are included in higher level totals.
(NA)	Not available.
(NC)	Not comparable.
(S)	Withheld because estimate did not meet publication standards on the basis of either the response rate or a consistency review.
(X)	Not applicable.
(Z)	Less than half the unit shown.
do	Ditto.
n.e.c.	Not elsewhere classified.
n.s.k.	Not specified by kind.
pt.	Part.
r	Revised.
SIC	Standard Industrial Classification.

Other abbreviations, such as lb, gal, yd, doz, bbl, and s tons, are used in the customary sense.

CONTACTS FOR DATA USERS

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Census/ASM		
Durables	Kenneth Hansen	(301) 763-7304
Nondurables	Michael Zampogna	(301) 763-2510
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Import/Export Publications	Foreign Trade Division	(301) 763-5140
Industry Analysis and Forecasts	International Trade Administration	(202) 377-4356

Table 1. Historical Statistics for the Industry: 1987 and Earlier Years

[Excludes data for auxiliaries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix.]

Year[1]	Companies[2] (no.)	All establishments[3] Total (no.)	All establishments[3] With 20 employees or more (no.)	All employees Number (1,000)	All employees Payroll (million dollars)	Production workers Number (1,000)	Production workers Hours (millions)	Production workers Wages (million dollars)	Value added by manufacture[4] (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	End-of-year inventories[4] (million dollars)	Ratios Specialization (percent)	Ratios Coverage (percent)
INDUSTRY 3011, TIRES AND INNER TUBES															
1987 Census	(NA)	162	98	65.4	2 070.4	52.6	103.7	1 596.5	5 559.1	4 864.5	10 426.7	336.8	1 024.7	(NA)	(NA)
1986 ASM	(NA)	(NA)	(NA)	65.2	2 020.4	51.7	98.8	1 531.0	5 249.9	4 517.1	9 909.5	389.9	994.3	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	70.3	2 045.8	55.9	105.2	1 546.4	5 300.4	5 182.2	10 434.0	496.7	1 170.8	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	70.4	2 088.6	56.3	112.3	1 592.9	5 312.0	5 541.9	10 722.8	310.1	1 154.9	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	66.9	1 857.2	52.2	103.5	1 397.1	5 263.8	4 731.6	10 165.4	243.5	1 025.2	(NA)	(NA)
1982 Census	108	164	99	70.3	1 733.9	54.6	101.1	1 285.6	4 660.4	4 594.6	9 340.1	227.0	1 172.6	99	98
1981 ASM	(NA)	(NA)	(NA)	79.3	1 859.0	62.3	118.3	1 406.5	4 853.5	5 126.3	9 870.9	301.5	1 018.3	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	87.2	1 732.9	66.1	121.7	1 292.6	4 075.6	4 589.0	8 803.2	330.7	1 115.7	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	103.2	1 945.6	81.0	154.6	1 471.0	4 457.3	5 187.4	9 542.4	359.6	1 252.8	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	102.8	1 769.7	81.0	160.9	1 351.9	4 107.2	4 826.0	8 890.1	339.8	1 161.8	(NA)	(NA)
1977 Census	127	200	126	114.0	1 832.4	88.3	176.4	1 366.0	4 347.3	4 803.0	8 971.0	289.0	1 172.1	96	99
1976 ASM	(NA)	(NA)	(NA)	103.9	1 363.5	78.8	136.0	954.5	3 533.7	4 010.6	7 713.9	243.8	1 009.8	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	106.1	1 332.3	80.0	152.7	979.5	3 462.8	3 761.8	7 143.1	272.0	1 083.4	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	117.3	1 452.7	89.8	177.8	1 070.4	3 703.3	3 840.4	7 347.6	486.3	1 018.5	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	114.6	1 332.5	88.3	172.8	988.9	3 518.0	3 030.9	6 541.8	374.3	785.7	(NA)	(NA)
1972 Census	136	206	126	107.5	1 214.1	83.1	168.9	908.1	3 070.8	2 745.1	5 747.1	267.1	768.4	97	99
INDUSTRY 3021, RUBBER AND PLASTICS FOOTWEAR															
1987 Census	(NA)	66	39	11.0	154.4	9.2	16.8	104.5	324.7	270.9	584.8	9.7	119.0	(NA)	(NA)
1986 ASM	(NA)	(NA)	(NA)	9.2	136.8	7.5	13.9	89.1	286.5	283.8	573.3	6.3	114.0	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	12.0	161.1	9.7	18.3	115.2	318.0	322.6	647.2	8.4	118.5	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	15.0	181.8	12.4	22.5	128.3	340.9	330.8	681.3	23.0	131.1	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	17.3	200.0	14.9	27.1	148.7	425.9	339.2	728.0	12.7	153.7	(NA)	(NA)
1982 Census	53	65	40	17.6	196.5	15.0	27.8	149.1	360.1	333.8	706.2	12.4	114.0	96	94
1981 ASM	(NA)	(NA)	(NA)	18.6	191.1	16.0	31.2	147.5	360.1	354.0	707.3	14.9	114.5	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	18.0	174.3	15.6	29.2	132.8	307.7	289.4	590.8	12.5	114.0	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	17.5	153.9	15.2	28.6	120.0	304.4	236.2	536.2	11.3	111.3	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	20.2	164.0	17.8	33.1	128.6	283.9	250.7	530.0	23.4	97.9	(NA)	(NA)
1977 Census	67	84	50	19.8	159.1	16.4	30.0	115.9	272.3	256.2	517.0	11.3	140.7	93	99
1976 ASM	(NA)	(NA)	(NA)	24.6	175.8	21.3	36.5	128.7	309.5	233.9	538.8	14.3	131.1	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	25.3	176.3	21.8	38.2	128.6	320.1	239.4	565.9	9.5	123.8	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	28.8	193.9	25.0	46.7	147.6	394.9	259.5	590.0	9.4	135.8	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	31.8	194.6	27.8	51.9	152.4	338.2	222.7	555.9	11.7	133.6	(NA)	(NA)
1972 Census	82	107	74	31.6	182.6	26.5	49.9	137.5	370.3	243.3	600.0	17.7	124.4	94	99
INDUSTRY 3052, RUBBER AND PLASTICS HOSE AND BELTING[5]															
1987 Census	(NA)	187	123	23.2	533.0	16.6	33.3	342.8	1 247.0	1 028.3	2 272.5	89.1	357.5	(NA)	(NA)
1986 ASM	(NA)	(NA)	(NA)	23.0	510.4	16.7	32.6	334.9	1 201.1	1 066.5	2 282.0	70.6	388.1	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	23.8	512.7	17.3	33.0	339.3	1 255.0	1 039.3	2 310.5	102.9	418.4	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	24.7	540.1	18.1	34.7	366.2	1 338.0	1 156.0	2 446.5	100.6	439.9	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	22.3	453.7	15.9	29.5	300.0	1 106.9	875.1	1 988.4	55.7	366.6	(NA)	(NA)
1982 Census	103	162	117	24.9	503.1	17.7	31.9	330.4	1 027.8	887.4	1 945.5	114.0	407.3	86	94
1981 ASM	(NA)	(NA)	(NA)	26.9	525.9	20.2	38.5	363.8	1 075.3	1 155.7	2 147.2	95.9	471.2	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	32.4	616.3	21.3	40.3	367.4	916.6	995.4	1 941.5	119.3	375.6	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	38.7	656.1	26.0	51.0	386.4	1 101.5	1 131.9	2 177.7	138.0	442.4	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	38.2	597.6	25.7	50.6	355.7	1 060.6	1 024.5	2 007.8	71.3	373.9	(NA)	(NA)
1977 Census	102	146	103	34.4	457.4	23.4	45.3	274.9	973.5	800.1	1 765.7	55.3	275.4	88	92
1976 ASM	(NA)	(NA)	(NA)	29.9	356.8	20.8	38.1	210.9	804.3	625.2	1 411.9	53.8	234.3	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	27.2	307.4	19.4	36.7	196.1	695.1	550.1	1 235.4	80.3	199.9	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	31.2	335.0	23.3	45.3	223.9	737.9	554.5	1 249.9	71.7	210.2	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	30.1	307.2	22.1	42.3	202.7	617.9	425.1	1 052.0	33.2	153.9	(NA)	(NA)
1972 Census	68	90	73	31.9	309.0	22.6	45.4	200.1	618.7	405.5	1 020.1	31.6	158.3	85	89
INDUSTRY 3053, GASKETS, PACKING AND SEALING DEVICES[6]															
1987 Census	(NA)	500	264	30.1	654.8	21.0	43.9	392.9	1 496.9	1 008.2	2 489.1	88.5	413.8	(NA)	(NA)
1986 ASM	(NA)	(NA)	(NA)	28.6	574.9	20.5	41.0	342.3	1 260.4	916.1	2 187.1	62.0	364.7	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	30.3	576.2	21.5	41.7	337.0	1 293.9	932.5	2 210.5	93.0	379.2	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	30.3	559.8	22.2	43.6	345.1	1 202.8	892.2	2 082.9	63.7	363.6	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	29.4	497.8	21.8	42.6	312.0	1 070.9	753.6	1 814.0	43.8	343.4	(NA)	(NA)
1982 Census	409	473	241	30.3	495.4	21.8	41.5	307.9	997.6	661.6	1 666.0	53.0	339.0	93	89
1981 ASM	(NA)	(NA)	(NA)	30.0	464.2	21.9	41.4	290.2	1 052.6	757.2	1 781.2	60.8	327.9	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	31.0	446.7	22.3	41.9	276.6	933.4	674.5	1 610.4	62.0	295.8	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	35.9	462.6	26.6	51.1	294.0	1 015.9	703.2	1 675.4	47.1	300.5	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	34.3	417.8	26.1	49.5	256.7	907.1	592.5	1 481.0	49.2	240.5	(NA)	(NA)
1977 Census	384	433	217	33.0	371.3	25.0	47.5	237.3	748.3	524.9	1 267.1	46.5	208.6	93	89
1976 ASM	(NA)	(NA)	(NA)	27.6	300.9	20.7	41.3	191.6	621.6	417.5	1 019.3	35.9	181.3	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	25.6	259.7	19.0	37.3	162.3	487.8	351.3	842.2	32.2	151.7	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	27.9	262.4	21.2	41.8	170.9	498.6	348.6	834.7	32.4	148.1	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	28.3	240.8	21.7	42.9	158.7	453.8	280.4	723.0	20.7	117.3	(NA)	(NA)
1972 Census	346	374	184	27.7	220.4	21.1	42.7	146.9	423.5	252.6	665.4	24.9	101.9	89	81
INDUSTRY 3061, MOLDED, EXTRUDED, AND LATHE CUT RUBBER MECHANICAL GOODS[7]															
1987 Census	(NA)	587	297	44.8	984.6	34.5	69.7	662.0	1 968.2	1 599.3	3 567.7	133.9	385.6	(NA)	(NA)
INDUSTRY 3069, FABRICATED RUBBER PRODUCTS, N.E.C.[7]															
1987 Census	(NA)	963	467	56.0	1 197.8	41.8	85.8	748.6	2 706.9	2 717.5	5 407.3	147.8	658.8	(NA)	(NA)

Note: Establishments of single unit companies with up to 20 employees (cutoff varied by industry) were excluded from the mail portion of the census. Data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were estimated based on administrative-record information from other agencies in conjunction with industry averages. These establishments accounted for the following percent of total value of shipments: SIC 3011, 1%; SIC 3021, 3%; SIC 3052, 6%; SIC 3053, 8%; SIC 3061, 21%; and SIC 3069, 11%.

[1]In annual survey of manufactures (ASM) years, data are estimates based on a representative sample of establishments canvassed annually and may differ from results of a complete canvass of all establishments. ASM publication shows percentage standard errors. Unless otherwise noted, for data prior to 1972, see 1972 Census of Manufactures, vol. II, table 1a of the industry chapter.

Table 1. Historical Statistics for the Industry: 1987 and Earlier Years—Con.

[2]For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.
[3]Includes establishments with payroll at any time during year.
[4]Beginning with the 1982 Census of Manufactures, all respondents were requested to report their inventories at (the lower of) cost or market prior to adjustment to LIFO cost. This is a change from prior Censuses and annual surveys of manufactures in which respondents were permitted to value their inventories using any generally accepted accounting method. Consequently, inventories and value added by manufacture are not comparable to prior-year data.
[5]Although there was no change in definition or content, old SIC Industry 3041, Rubber and Plastics Hose and Belting was renumbered to new SIC Industry 3052, Rubber and Plastics Hose and Belting.
[6]Although there was no change in definition or content, old SIC Industry 3293, Gaskets, Packing, and Sealing Devices was renumbered to new SIC Industry 3053, Gaskets, Packing, and Sealing Devices.
[7]Industry definition is new for 1987 Census of Manufactures. An explanation of the Standard Industrial Classification revision will appear in the final industry series text that supercedes this report.

Table 2. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 product code	Product	1987			1982		
		Number of companies with shipments of $100,000 or more	Product shipments[1]		Number of companies with shipments of $100,000 or more	Product shipments[1]	
			Quantity[2]	Value (million dollars)		Quantity[2]	Value (million dollars)
3011- --	**TIRES AND INNER TUBES**						
	Total	**(NA)**	**(X)**	**10 034.1**	**(NA)**	**(X)**	**9 047.3**
30111 --	Passenger car pneumatic tires (casings)	(NA)	(X)	5 821.2	(NA)	(X)	5 068.4
30111 12	Radial mil tires	(NA)	(S)	5 271.6	11	96.5	3 756.2
30111 15	Other do	(NA)	*21.7	549.6	13	*48.7	1 312.1
30111 00	Passenger car pneumatic tires (casings), n.s.k.	(NA)	(X)	-	(NA)	(X)	-
30112 --	Truck and bus, including off-the-highway pneumatic tires	(NA)	(X)	2 727.3	(NA)	(X)	2 592.7
	Light truck:						
30112 11	Radial mil tires	(NA)	*13.0	798.2	9	3.2	247.3
30112 12	Other do	(NA)	10.1	540.7	13	13.7	657.3
	Large off-the-highway (sizes 16.00 in. and larger):						
30112 21	Radial mil tires	(NA)	(S)	161.7	7	.3	240.8
30112 22	Other do	(NA)	(S)	348.7			
	Other truck and bus tires, pneumatic tires:						
30112 31	Radial mil tires	(NA)	(S)	576.2	7	4.2	657.5
30112 32	Other do	(NA)	(S)	301.8	9	5.5	789.7
30112 00	Truck and bus, including off-the-highway pneumatic tires, n.s.k.	(NA)	(X)	-	(NA)	(X)	-
30117 --	Tractor and implement pneumatic tires:						
30117 00	Tractor and implement (farm and industrial) pneumatic mil tires	(NA)	(S)	347.5	7	4.2	243.1
30118 --	Industrial and utility pneumatic tires:						
30118 00	Industrial and utility pneumatic tires, including garden mil tires	(NA)	2.9	165.5	(NA)	(X)	186.3
30119 --	Other pneumatic tires	(NA)	(X)	164.9	(NA)	(X)	123.3
30119 21	Motorcycle, motorbike, and moped pneumatic tires (casings) mil tires	(NA)	(D)	(D)	3	.7	17.2
30119 22	Aircraft do	(NA)	(D)	(D)			
30119 23	Mobile home do	(NA)	(D)	(D)	3	**6.1	106.1
30119 24	Other pneumatic tires and casings, including bicycle do	(NA)	(D)	(D)			
30119 00	Other pneumatic tires, n.s.k.	(NA)	(X)	.3	(NA)	(X)	-
3011A --	Solid and semipneumatic tires	(NA)	(X)	120.5	(NA)	(X)	127.6
	Solid tires:						
3011A 39	Industrial, highway, bogie, idler, and support rollers mil tires	(NA)	*9.9	57.3	(NA)	*6.8	72.7
	Other solid and semipneumatic tires:						
3011A 41	2.00 in. or larger, except hand lawnmower, baby carriage, tricycle, juvenile, etc. mil tires	(NA)	(D)	(3)	7	12.8	26.2
3011A 51	Less than 2.00 in. including hand lawnmower, baby carriage, tricycle, juvenile, etc. do	(NA)	(S)	363.1	7	**38.2	28.7
3011A 00	Solid and semipneumatic tires, n.s.k.	(NA)	(X)	-	(NA)	(X)	-
3011B --	Truck and bus inner tubes, including off-the-highway:						
3011B 00	Truck and bus inner tubes, including off-the-highway mil tubes	(NA)	**12.5	78.5	8	*11.0	90.5
3011C --	All other inner tubes	(NA)	(X)	61.4	(NA)	(X)	94.6
3011C 21	Passenger car and motorcycle mil tubes	(NA)	*4.9	18.4	12	18.5	56.2
3011C 25	Tractor and implement (farm and industrial) do	(NA)	2.8	36.7	7	**2.0	24.1
3011C 29	All other inner tubes, including aircraft, industrial, utility, garden, and bicycle do	(NA)	(S)	4.6	(NA)	(S)	14.4
3011C 00	All other inner tubes, n.s.k.	(NA)	(X)	1.7	(NA)	(X)	-
3011D --	Tread rubber, tire sundries, and repair materials	(NA)	(X)	480.1	(NA)	(X)	501.4
3011D 11	Tread rubber (camelback), including slab rubber for use in automatic tread rubber extruding machines mil lb	(NA)	(S)	349.9	28	*412.6	373.2
3011D 31	Tire flaps millions	(NA)	(D)	(4)	6	**5.4	16.8
3011D 39	Other tire sundries, repair materials, and tiring mil lb	(NA)	(S)	*114.5	23	*61.2	111.4
3011D 00	Tread rubber, tire sundries, and repair materials, n.s.k.	(NA)	(X)	15.7	(NA)	(X)	-
30110 --	Tires and inner tubes, n.s.k.	(NA)	(X)	67.2	(NA)	(X)	19.3
30110 00	Tires and inner tubes, n.s.k., typically for establishments with 20 employees or more (see note)	(NA)	(X)	38.4	(NA)	(X)	2.5
30110 02	Tires and inner tubes, n.s.k., typically for establishments with less than 20 employees (see note)	(NA)	(X)	28.8	(NA)	(X)	16.8

See footnotes at end of table.

Table 2. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 product code	Product	1987			1982		
		Number of companies with shipments of $100,000 or more	Product shipments[1]		Number of companies with shipments of $100,000 or more	Product shipments[1]	
			Quantity[2]	Value (million dollars)		Quantity[2]	Value (million dollars)
3021- —	**RUBBER AND PLASTICS FOOTWEAR**						
	Total	**(NA)**	**(X)**	**536.0**	**(NA)**	**(X)**	**562.6**
30214 —	Protective footwear:						
30214 00	Protective footwear (for additional detail, see Current Industrial Report MA-31A, Footwear)	(NA)	(X)	130.4	14	(X)	121.8
30215 —	Shoes with soles vulcanized, molded, or cemented to fabric upper, including tennis, running, basketball, etc., and espadrilles, but excluding sandals and slippers:						
30215 00	Shoes with soles vulcanized, molded, or cemented to fabric upper, including tennis, running, basketball, etc., and espadrilles, but excluding sandals and slippers (for additional detail, see Current Industrial Report MA-31A, Footwear)	(NA)	(X)	387.5	36	(X)	536.1
30210 —	Rubber and plastics footwear, n.s.k.	(NA)	(X)	18.1	(NA)	(X)	4.7
30210 00	Rubber and plastics footwear, n.s.k., typically for establishments with 20 employees or more (see note)	(NA)	(X)	12.6	(NA)	(X)	1.4
30210 02	Rubber and plastics footwear, n.s.k., typically for establishments with less than 20 employees (see note)	(NA)	(X)	5.5	(NA)	(X)	3.3
3052- —	**RUBBER AND PLASTICS HOSE AND BELTING**						
	Total	**(NA)**	**(X)**	**2 222.3**	**(NA)**	**(X)**	**1 699.3**
30521 —	Rubber and plastics belts and belting, flat:						
30521 00	Rubber and plastics belts and belting, flat (for additional detail, see Current Industrial Report MA-30B, Rubber and Plastics Hose and Beltings)	(NA)	(X)	266.0	36	(X)	291.2
30522 —	Rubber and plastics transmission belts and belting, other than flat:						
30522 00	Rubber and plastics transmission belts and belting, other than flat (for additional detail, see Current Industrial Report MA-30B, Rubber and Plastics Hose and Beltings)	(NA)	(X)	478.1	15	(X)	391.7
30523 —	Rubber hose, mandrel made and all hydraulic:						
30523 00	Rubber hose, mandrel made and all hydraulic (for additional detail, see Current Industrial Report MA-30B, Rubber and Plastics Hose and Beltings)	(NA)	(X)	465.9	28	(X)	310.3
30524 —	Rubber hose, long length nonhydraulic, except garden:						
30524 00	Rubber hose, long length nonhydraulic, except garden (for additional detail, see Current Industrial Report MA-30B, Rubber and Plastics Hose and Beltings)	(NA)	(X)	254.2	17	(X)	169.4
30525 —	Rubber and plastics garden hose:						
30525 00	Rubber and plastics garden hose (for additional detail, see Current Industrial Report MA-30B, Rubber and Plastics Hose and Beltings)	(NA)	(X)	163.0	11	(X)	110.4
30526 —	All other rubber and plastics hose, n.e.c.:						
30526 00	All other rubber and plastics hose, n.e.c. (for additional detail, see Current Industrial Report MA-30B, Rubber and Plastics Hose and Beltings)	(NA)	(X)	524.1	53	(X)	410.4
30520 —	Rubber and plastics hose and belting, n.s.k.	(NA)	(X)	70.9	(NA)	(X)	15.9
30520 00	Rubber and plastics hose and belting, n.s.k., typically for establishments with 20 employees or more (see note)	(NA)	(X)	50.9	(NA)	(X)	5.9
30520 02	Rubber and plastics hose and belting, n.s.k., typically for establishments with less than 20 employees (see note)	(NA)	(X)	20.0	(NA)	(X)	10.0
3053- —	**GASKETS, PACKING, AND SEALING DEVICES**						
	Total	**(NA)**	**(X)**	**2 413.5**	**(NA)**	**(X)**	**1 663.7**
30534 —	Compression packings	(NA)	(X)	79.5	(NA)	(X)	99.8
30534 11	Plant fiber	(NA)	(X)	[5]	4	(X)	3.3
30534 13	Asbestos containing	(NA)	(X)	.4	12	(X)	7.9
30534 15	Synthetic fiber, plastics composition	(NA)	(X)	31.9	12	(X)	17.9
30534 17	All other compression packings, n.e.c.	(NA)	(X)	[5]47.1	10	(X)	70.7
30534 00	Compression packings, n.s.k.	(NA)	(X)	-	(NA)	(X)	-
30535 —	Nonmetallic gaskets and gasketing	(NA)	(X)	672.7	(NA)	(X)	469.4
30535 11	Asbestos, compressed	(NA)	(X)	39.0	47	(X)	45.8
30535 13	Asbestos, beater saturated	(NA)	(X)	16.8	29	(X)	28.3
30535 15	Elastomeric, all material	(NA)	(X)	270.2	99	(X)	169.0
30535 17	Paper, felt base, and plant fiber	(NA)	(X)	62.6	28	(X)	50.1
30535 19	Cork and cork composition	(NA)	(X)	109.6	39	(X)	44.0
30535 21	Flurocarbon (including envelope type)	(NA)	(X)	14.9	8	(X)	3.9
30535 23	Asbestos cloth (including cloth with binder)	(NA)	(X)	4.5	14	(X)	6.0
30535 29	Other nonmetallic, n.e.c.	(NA)	(X)	150.0	67	(X)	113.8
30535 00	Nonmetallic gaskets and gasketing, n.s.k.	(NA)	(X)	5.2	(NA)	(X)	8.4
30536 —	Molded packings and seals	(NA)	(X)	624.4	(NA)	(X)	403.5
30536 21	O-rings (including spliced; excluding metal)	(NA)	(X)	154.9	41	(X)	103.1
30536 22	Squeeze type, solid section ring seals (including rectangular, quad, delta, D, tee; excluding O-rings)	(NA)	(X)	113.4	20	(X)	27.9
30536 25	Flexible seals, dual component—cushioned rings, backed, constrained, or loaded by an elastomeric ring	(NA)	(X)	13.5	15	(X)	35.7
30536 26	Flexible seals, single and multiple component lip type, both symmetrical and nonsymmetrical (V-ring, V-ring sets, U-cup, cup seal, flange seal, collar seal, single lip)	(NA)	(X)	93.6	32	(X)	71.3

See footnotes at end of table.

Table 2. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 product code	Product	1987			1982		
		Number of companies with shipments of $100,000 or more	Product shipments[1]		Number of companies with shipments of $100,000 or more	Product shipments[1]	
			Quantity[2]	Value (million dollars)		Quantity[2]	Value (million dollars)
3053- --	**GASKETS, PACKING, AND SEALING DEVICES**—Con.						
30536 --	Molded packings and seals—Con.						
30536 30	Diaphragm seal—flat, rolling	(NA)	(X)	35.7	24	(X)	32.5
30536 35	All other molded packings and seals (including leather and plastics seals, exclusion devices (nonmetallic), and piston rings (nonmetallic))	(NA)	(X)	207.1	65	(X)	133.0
30536 00	Molded packings and seals, n.s.k.	(NA)	(X)	6.2	(NA)	(X)	-
30537 --	Metallic gaskets and machined seals	(NA)	(X)	293.1	(NA)	(X)	225.5
30537 29	Spiral wound filler type	(NA)	(X)	39.8	14	(X)	36.0
30537 39	Heavy cross-section, API type	(NA)	(X)	(D)	11	(X)	26.0
30537 41	Piston rings (nonautomotive)	(NA)	(X)	(D)	2	(X)	(3)
30537 43	Exclusion devices	(NA)	(X)	(D)	1	(X)	(3)
30537 49	Other metal gaskets and machined seals, n.e.c.	(NA)	(X)	230.6	43	(X)	4163.4
30537 00	Metallic gaskets and machined seals, n.s.k.	(NA)	(X)	3.5	(NA)	(X)	-
30538 --	Axial mechanical face seals	(NA)	(X)	168.7	(NA)	(X)	89.8
30538 10	Complete mechanical seals with single coil springs	(NA)	(X)	55.2	7	(X)	(7)
30538 13	Complete mechanical seals with multiple coil springs	(NA)	(X)	26.7	5	(X)	(7)
30538 15	Complete mechanical seals with bellows	(NA)	(X)	(D)	3	(X)	771.5
30538 17	Parts for all axial mechanical face seals	(NA)	(X)	(D)	6	(X)	3.6
30538 19	Clearance, labyrinth, and other face seals, n.e.c.	(NA)	(X)	32.7	4	(X)	14.6
30538 00	Axial mechanical face seals, n.s.k.	(NA)	(X)	-	(NA)	(X)	-
30539 --	Rotary oil seals	(NA)	(X)	353.4	(NA)	(X)	275.8
30539 70	Bonded, sprung (spring loaded) (elastomeric material bonded chemically to a reinforcing insert during vulcanization; configuration being designed to retain an annular compression or extension spring)	(NA)	(X)	213.0	14	(X)	143.4
30539 73	Bonded, unsprung (nonspring loaded) (elastomeric material bonded chemically to a reinforcing member during vulcanization; these designs do not require a spring)	(NA)	(X)	57.5	17	(X)	38.7
30539 75	Unitized (multiplicity of components, some of which may be chemically bonded, pressed, or crimped together to be sold and installed as a unit; seals could also include wear rings or sealing counterfaces.)	(NA)	(X)	42.4	9	(X)	23.8
30539 77	Nonmetallic (can be bonded or assembled seals using nonmetallic reinforcing members or all rubber which may rely on the application housing for proper support)	(NA)	(X)	14.0	10	(X)	14.3
30539 79	Nonbonded assembled (unitized seal with components mechanically crimped or pressed together usually sold and used as a unit)	(NA)	(X)	(3)	6	(X)	12.8
30539 81	Other (labyrinth, proximity, all metallic, inflatable, displacement, or boundary lubrication seals)	(NA)	(X)	826.4	8	(X)	42.7
30539 00	Rotary oil seals, n.s.k.	(NA)	(X)	(Z)	(NA)	(X)	-
30530 --	Gaskets, packing, and sealing devices, n.s.k.	(NA)	(X)	223.7	(NA)	(X)	100.0
30530 00	Gaskets, packing, and sealing devices, n.s.k., typically for establishments with 20 employees or more (see note)	(NA)	(X)	104.1	(NA)	(X)	48.2
30530 02	Gaskets, packing, and sealing devices, n.s.k., typically for establishments with less than 20 employees (see note)	(NA)	(X)	119.6	(NA)	(X)	51.8
3061- --	**MOLDED, EXTRUDED AND LATHE CUT RUBBER MECHANICAL GOODS**						
	Total	**(NA)**	**(X)**	**3 150.8**	**(NA)**	**(X)**	**2 046.6**
30611 --	Molded rubber mechanical goods, automotive:						
30611 00	Molded rubber mechanical goods, automotive (for additional detail, see Current Industrial Report MA-30C, Rubber Mechanical Goods)	(NA)	(X)	1 162.4	111	(X)	577.3
30612 --	Molded rubber mechanical goods, transportation, except automotve (including off-the-highway):						
30612 00	Molded rubber mechanical goods, transportation, except automotive (including off-the-highway) (for additional detail, see Current Industrial Report MA-30C, Rubber Mechanical Goods)	(NA)	(X)	200.2	(NA)	(X)	367.8
30613 --	Other molded rubber mechanical goods:						
30613 00	Other molded rubber mechanical goods (for additional detail, see Current Industrial Report MA-30C, Rubber Mechanical Goods)	(NA)	(X)	747.9	(NA)	(X)	632.3
30614 --	Extruded rubber mechanical goods, automotive (except tubing):						
30614 00	Extruded rubber mechanical goods, automotive (except tubing) (for additional detail, see Current Industrial Report MA-30C, Rubber Mechanical Goods)	(NA)	(X)	341.9	26	(X)	152.8
30615 --	Other extruded rubber mechanical goods, except automotive:						
30615 00	Other extruded rubber mechanical goods, except automotive (for additional detail, see Current Industrial Report MA-30C, Rubber Mechanical Goods)	(NA)	(X)	268.1	(NA)	(X)	241.8
30616 --	Lathe-cut rubber mechanical goods, automotive:						

See footnotes at end of table.

Table 2. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982—Con.

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1987 product code	Product	1987			1982		
		Number of companies with shipments of $100,000 or more	Product shipments[1]		Number of companies with shipments of $100,000 or more	Product shipments[1]	
			Quantity[2]	Value (million dollars)		Quantity[2]	Value (million dollars)
3061- —	**MOLDED, EXTRUDED AND LATHE CUT RUBBER MECHANICAL GOODS**—Con.						
30616 00	Lathe cut rubber goods, automotive (for additional detail, see Current Industrial Report MA-30C, Rubber Mechanical Goods)	(NA)	(X)	44.7	13	(X)	22.5
30617 —	Other lathe cut rubber mechanical goods, except automotive:						
30617 00	Other lathe cut rubber mechanical goods, except automotive (for additional detail, see Current Industrial Report MA-30C, Rubber Mechanical Goods)	(NA)	(X)	36.7	25	(X)	35.9
30610 —	Molded, extruded and lathe cut mechanical rubber goods, n.s.k.	(NA)	(X)	348.9	(NA)	(X)	15.9
30610 00	Molded, extruded and lathe cut mechanical rubber goods, n.s.k., typically for establishments with 20 employees or more (see note)	(NA)	(X)	219.3	(NA)	(X)	15.9
30610 02	Molded, extruded and lathe cut mechanical rubber goods, n.s.k., typically for establishments with less than 20 employees (see note)	(NA)	(X)	129.6	(NA)	(X)	(NA)
3069- —	**FABRICATED RUBBER PRODUCTS, N.E.C.**						
	Total	**(NA)**	**(X)**	**5 428.5**	**(NA)**	**(X)**	**4 104.7**
30693 —	Sponge, expanded and foam rubber products	(NA)	(X)	746.7	(NA)	(X)	449.8
	Latex foam:						
30693 17	Automotive seating, interior padded trim, and insulation (mil lb)	(NA)	(S)	132.0	3	(S)	94.5
30693 23	Upholstery (sheet and slab stock) (do.)	(NA)	(S)	14.3			
30693 51	Carpet and rug cushions (mil sq yd)	(NA)	*39.5	35.4	8	**57.7	78.7
30693 68	Other latex foam products (including clothing, insulation and padding, hospital padding, and topper pads) (mil lb)	(NA)	47.0	160.9	18	(S)	64.1
	Chemically blown products:						
	Open cell sponge:						
30693 73	Carpet and rug cushions (mil sq yd)	(NA)	**65.7	82.5	7	15.3	21.1
30693 74	Automotive (mil lb)	(NA)	(S)	2.8	6	24.9	34.3
30693 75	Other (do.)	(NA)	(S)	98.3	15	**19.6	20.7
	Closed cell sponge:						
30693 77	Automotive (mil lb)	(NA)	(S)	47.1	14	(S)	35.2
30693 82	Appliances, air-conditioning and refrigeration (do.)	(NA)	(S)	38.7	5	(S)	10.3
30693 83	Construction (do.)	(NA)	(S)	26.3	20	(S)	89.3
30693 84	Other (do.)	(NA)	(S)	99.9			
30693 00	Sponge, expanded and foam rubber goods, n.s.k.	(NA)	(X)	8.6	(NA)	(X)	1.7
30694 —	Rubber floor and wall coverings	(NA)	(X)	409.1	(NA)	(X)	236.4
	Mats, matting, and stair treads:						
30694 21	Rolls (mil sq yd)	(NA)	(S)	23.5	10	34.8	44.6
	Individual mats:						
30694 23	Automotive (mil sq yd)	(NA)	(S)	230.7	6	**77.4	83.6
30694 25	All other (including stair treads) (do.)	(NA)	(S)	81.4	13	(S)	17.6
30694 26	Other floor and wall coverings (including cove base, wainscotting, etc.) (do.)	(NA)	(S)	70.9	8	(S)	49.7
30694 00	Rubber floor and wall coverings, n.s.k.	(NA)	(X)	2.5	(NA)	(X)	40.9
30695 —	Prophylactics:						
30695 00	Prophylactics (1,000 dozens)	(NA)	151 231.1	103.3	6	61 855.8	54.7
30696 —	Shoe products, rubber, elastomer resin	(NA)	(X)	135.3	(NA)	(X)	265.0
30696 11	Heels (mil pair)	(NA)	(S)	16.3	14	(S)	54.1
30696 31	Soles (do.)	(NA)	(S)	20.7	19	**103.0	99.4
30696 51	Soling slabs and top lift sheets (mil sq ft)	(NA)	(S)	42.5	8	*166.4	77.1
30696 61	Unit sole (sole and heel combination) (mil pair)	(NA)	(S)	54.0	14	20.6	33.9
30696 00	Shoe products, rubber, elastomer resin, n.s.k.	(NA)	(X)	1.8	(NA)	(X)	.5
30698 —	Rubber druggist and medical sundries (including household gloves)	(NA)	(X)	499.0	(NA)	(X)	399.5
30698 31	Nipples and pacifiers (1,000 gross)	(NA)	(S)	31.9	7	(S)	47.3
	Gloves (including rubberized):						
30698 51	Household (1,000 doz pairs)	(NA)	(S)	69.3	10	(S)	54.4
30698 61	Surgical (do.)	(NA)	97 398.8	234.5	12	28 666.3	156.7
30698 76	Diaphragms, separate and in kits (thousands)	(NA)	(D)	[9]	3	(X)	[10]
30698 77	Other (including ice bags, caps, water bottles, fountain syringes, and combinations)	(NA)	(X)	[9]146.5	(NA)	(X)	[10]139.4
30698 00	Rubber druggist and medical sundries (including household gloves), n.s.k.	(NA)	(X)	16.7	(NA)	(X)	1.7
30699 —	Compounds or mixtures for sale or interplant transfer:						
30699 00	Rubber compounds or mixtures for sale or interplant transfer	(NA)	(X)	968.5	(NA)	(X)	594.1
3069C —	Industrial rubber products, n.e.c. (excluding rubber hose and belting, mats, and matting)	(NA)	(X)	1 057.0	(NA)	(X)	798.6
3069C 11	Pressure sensitive tape, rubber-backed (including friction) (mil lb)	(NA)	(S)	53.0	17	*16.4	52.9
3069C 13	Fuel cells (mil cells)	(NA)	(D)	(D)	4	(S)	36.8
3069C 14	Single ply membrane roofing (1,000 sq ft)	(NA)	(S)	310.6	11	240 882.0	148.5
	Roll covering:						
3069C 12	Graphic arts, rubber and plastics (printing trade)	(NA)	(X)	110.7	32	(X)	128.1
3069C 15	Paper mill, rubber	(NA)	(X)	62.7	11	(X)	49.6
3069C 16	Industrial, rubber (excluding steel mills and plastics)	(NA)	(X)	35.9	28	(X)	29.6
3069C 17	Other roll coverings (including steel mills and plastics)	(NA)	(X)	34.8	9	(X)	9.1

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1987 product code	Product	1987			1982		
		Number of companies with shipments of $100,000 or more	Product shipments[1]		Number of companies with shipments of $100,000 or more	Product shipments[1]	
			Quantity[2]	Value (million dollars)		Quantity[2]	Value (million dollars)
3069- --	**FABRICATED RUBBER PRODUCTS, N.E.C.**—Con.						
3069C --	Industrial rubber products, n.e.c. (excluding rubber hose and belting, mats, and matting)—Con.						
	Sheet rubber, linings, and rubber film:						
3069C 21	Film, vulcanized (less than 10 mil thick) ---- mil sq yd	(NA)	(D)	(D)	4	*.4	4.6
3069C 22	Sheet rubber, vulcanized (10 mil thick or more) ---- do	(NA)	(S)	123.1	34	(S)	123.0
3069C 24	Vulcanizable elastomeric linings ---- do	(NA)	(S)	20.5	21	(S)	34.8
3069C 30	Printers' blankets ---- thousands	(NA)	(S)	56.5	13	(X)	88.3
3069C 41	Other (including jar rings) ----	(NA)	(X)	168.9	21	(X)	90.7
3069C 00	Industrial rubber products, n.e.c., (excluding rubber hose and belting, mats, and matting), n.s.k. ----	(NA)	(X)	40.3	(NA)	(X)	2.3
3069D --	Rubber coated fabrics and rubber clothing ----	(NA)	(X)	328.2	(NA)	(X)	362.0
	Rubber coated fabrics:						
3069D 14	Garment fabrics ---- mil sq yd	(NA)	(S)	11.5	7	(S)	26.7
3069D 16	Footwear fabrics ---- do	(NA)	(D)	(11)	7	10 393.6	45.2
3069D 18	Inflatable fabrics ---- do	(NA)	(S)	18.8	8	(S)	14.9
3069D 20	Other coated fabrics (including automotive and furniture upholstery, hospital and crib sheeting, and protective covering fabrics) ---- do	(NA)	(S)	95.1	(NA)	(S)	106.0
	Rubber clothing:						
3069D 41	Industrial rubber gloves ---- 1,000 doz pairs	(NA)	**6 398.6	105.2	11	*5 384.8	101.4
3069D 42	Other rubber clothing (including wet suits, rainwear, aprons, dress shields, baby pants, bathing and shower caps) ----	(NA)	(X)	11)86.7	(NA)	(X)	66.9
3069D 00	Rubber coated fabrics and rubber clothing, n.s.k. ----	(NA)	(X)	11.0	(NA)	(X)	.9
3069E --	Other rubber goods ----	(NA)	(X)	561.4	(NA)	(X)	638.4
	Hard rubber mechanical goods:						
	Battery jars, boxes, and parts:						
3069E 11	Jars and boxes ---- millions	(NA)	(D)	(D)	3	7.7	24.6
3069E 12	Parts ----	(NA)	(X)	(D)	4	(X)	19.3
3069E 19	Other ----	(NA)	(X)	23.1	9	(X)	13.8
3069E 20	Reclaimed rubber (any vulcanizable material except reclaimed residue or "mud" derived from processing or treatment of natural or synthetic (chemical) vulcanized scrap rubber) ---- mil lb	(NA)	(S)	39.0	12	(S)	56.8
3069E 21	Thread, bare ---- do	(NA)	(D)	(D)	7	42.5	63.6
3069E 22	Boats, pontoons, and life rafts ----	(NA)	(X)	36.5	7	(X)	14.0
3069E 23	Balloons (toy, advertising, meteorological, etc.) ----	(NA)	(X)	101.4	11	(X)	58.4
	Stationer's sundries:						
3069E 24	Bands ---- mil lb	(NA)	(S)	21.4	5	13.2	26.0
3069E 25	Other (including finger cots, erasers, but excluding pencil plugs) ---- do	(NA)	(S)	7.1	7	**2.0	16.5
3069E 26	Toys (including balls, except balloons and dolls) ----	(NA)	(X)	(D)	7	(X)	17.4
3069E 27	Tank blocks, treads, and band tracks ----	(NA)	(X)	(D)	4	(X)	86.6
3069E 29	Other rubber goods ----	(NA)	(X)	221.4	84	(X)	241.4
3069E 00	Other rubber goods, n.s.k. ----	(NA)	(X)	38.8	(NA)	(X)	1.9
30690 --	Fabricated rubber products, n.e.c., n.s.k. ----	(NA)	(X)	620.0	(NA)	(X)	306.3
30690 00	Fabricated rubber products, n.e.c., n.s.k., typically for establishments with 20 employees or more (see note) ----	(NA)	(X)	479.2	(NA)	(X)	110.9
30690 02	Fabricated rubber products, n.e.c., n.s.k., typically for establishments with less than 20 employees (see note) ----	(NA)	(X)	140.9	(NA)	(X)	195.4

Note: In 1987 Census of Manufactures, data for establishments of small single unit companies with up to 20 employees were estimated from administrative-record data rather than data actually collected from respondents. Employment cutoffs used for administrative records for each industry and shipments figures are included in code ending with "002". In both 1987 and 1982 Censuses of Manufactures, products not completely identified on standard forms were coded in appropriate product class (five-digit) followed by "00" or to appropriate product group code (four-digit) followed by "000".

[1]Data reported by all producers, not just those with shipments of $100,000 or more.

[2]For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: * 10 to 19 percent estimated; ** 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by (S).

[3]For 1987, data for product codes 3011A41 and 3011A51 are combined to avoid disclosing data for individual companies.

[4]For 1987, data for product codes 3011D31 and 3011D39 are combined to avoid disclosing data for individual companies.

[5]For 1987, data for product codes 3053411 and 3053417 are combined to avoid disclosing data for individual companies.

[6]For 1982, product codes 3053741 and 3053743 were combined with product code 3053749 to avoid disclosing data for individual companies.

[7]For 1982, product codes 3053810 and 3053813 were combined with product code 3053815 to avoid disclosing data for individual companies.

[8]For 1987, data for product codes 3053979 and 3053981 are combined to avoid disclosing data for individual companies.

[9]For 1987, data for product codes 3069876 and 3069877 are combined to avoid disclosing data for individual companies.

[10]For 1982, product code 3069876 was combined with product code 3069877.

[11]For 1987, data for product codes 3069D16 and 3069D42 are combined to avoid disclosing data for individual companies.

Table 3. Materials Consumed by Kind: 1987 and 1982

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 material code	Material	1987		1982	
		Quantity[1]	Delivered cost (million dollars)	Quantity[1]	Delivered cost (million dollars)
	INDUSTRY 3011, TIRES AND INNER TUBES				
	Materials, parts, containers, and supplies	**(X)**	**4 335.7**	**(X)**	**4 037.9**
	Natural rubber:				
083113	Latex (dry solids content) — mil lb	218.7	109.3	11.7	8.6
083111	Dry — do	981.0	436.5	891.9	438.8
	Synthetic rubber:				
282201	SBR (styrene-butadiene copolymers, including solution polymerized types) with styrene content of 50 percent or less; polybutadienes, emulsion polymerized types; and butadiene-vinylpyridiene copolymers — mil lb	1 660.2	648.5	1 491.5	707.7
282204	Butyl type — do	166.1	121.9	176.1	127.7
282206	Nitrile type (butadiene-acrylonitrile) — do	(D)	(?)	19.7	13.0
282211	Stereo polybutadiene elastomers (solution polymerized polybutadiene) — do	360.0	158.3	320.0	186.0
282221	Other elastomers — do	95.1	47.8	168.8	110.1
306903	Reclaimed rubber, excluding "mud" and crumb or ground scrap — do	*60.1	16.8	115.9	36.4
306991	Rubber compounds and mixtures purchased (dry rubber solids content) — do	471.3	255.3	279.5	181.7
286933	Rubber processing chemicals (accelerators, antioxidants, blowing agents, inhibitors, peptizers, etc.)	(X)	489.3	(X)	263.8
286935	Plasticizers — mil lb	187.4	50.3	221.7	42.2
289501	Carbon black — do	1 324.8	330.6	1 453.0	461.5
281600	Inorganic pigments — do	188.1	81.0	221.2	92.3
282104	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc., but excluding sheets, rods, tubes, and shapes — do	**17.9	11.9	32.4	20.9
	Tire cord and tire fabrics:				
229602	Rayon cord — mil lb	(S)	13.5	12.2	21.9
229603	Nylon cord — do	122.0	252.8	144.7	300.7
229605	Polyester cord — do	*170.2	305.8	165.1	282.4
229606	Fiberglass fabrics — do	5.6	8.9	30.1	45.3
229607	Metallic cord — do	160.9	178.0	119.9	140.9
229610	Chafer, other tire fabrics, and tire cord — do	6.7	22.5	20.7	50.6
331017	Steel wire — 1,000 s tons	**241.3	315.4	176.9	190.2
260091	Paper and paperboard containers, including shipping sacks and other paper packaging supplies	(X)	25.0	(X)	11.7
970099	All other materials and components, parts, containers, and supplies consumed	(X)	384.3	(X)	279.9
971000	Materials, parts, containers, and supplies, n.s.k.[2]	(X)	72.0	(X)	23.6
	INDUSTRY 3021, RUBBER AND PLASTICS FOOTWEAR				
	Materials, parts, containers, and supplies	**(X)**	**225.6**	**(X)**	**277.5**
	Natural rubber:				
083113	Latex (dry solids content) — mil lb	*.5	.3	5.5	4.3
083111	Dry — do	(S)	1.6	23.1	16.2
282200	Synthetic rubber and elastomers — do	(S)	3.3	(S)	24.6
306991	Rubber compounds and mixtures purchased (dry rubber solids content) — do	(D)	(D)	**7.9	4.0
286933	Rubber processing chemicals (accelerators, antioxidants, blowing agents, inhibitors, peptizers, etc.)	(X)	11.6	(X)	4.9
286935	Plasticizers — mil lb	(D)	(D)	4.9	2.1
282104	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc., but excluding sheets, rods, tubes, and shapes — do	(S)	6.3	*26.0	15.2
308007	Plastics products consumed in the form of sheets, rods, tubes, and other shapes	(X)	(D)	(X)	3.2
	Fabrics:				
220311	Cotton — mil lb	(S)	22.8	24.7	46.3
220313	Nylon — do	–	–	9.9	16.7
220315	Polyester — do	(D)	(D)	*2.3	8.2
220320	Other, including rayon — do	(D)	(D)	(S)	6.5
260091	Paper and paperboard containers including shipping sacks and other paper packaging materials	(X)	7.0	(X)	11.4
970099	All other materials and components, parts, containers, and supplies consumed	(X)	95.8	(X)	83.0
971000	Materials, parts, containers, and supplies, n.s.k.[2]	(X)	48.0	(X)	30.9
	INDUSTRY 3052, RUBBER AND PLASTICS HOSE AND BELTING				
	Materials, parts, containers, and supplies	**(X)**	**939.3**	**(X)**	**764.5**
	Natural rubber:				
083113	Latex (dry solids content) — mil lb	(S)	3.5	(S)	2.8
083111	Dry — do	(S)	12.1	*16.5	10.5
	Synthetic rubber:				
282201	SBR type (stryene-butadiene copolymers, including solution polymerized types) with styrene content of 50 percent or less; polybutadienes, emulsion poltymerized types; and butadiene-vinylpridine copolymers — mil lb	**78.2	56.1	**64.9	31.7
282205	Polychloroprene type — do	18.2	22.2	28.1	32.9
282206	Nitrile type (butadiene-acrylonitrile) — do	**16.5	13.5	*22.3	22.2
282215	Ethylene-propylene type — do	*26.8	19.6	43.1	31.4
282223	Other elastomers — do	(S)	27.6	(S)	19.7
306903	Reclaimed rubber, excluding "mud" and crumb or ground scrap — do	(S)	.9	28.5	3.8
306992	Rubber compounds and mixtures purchased (dry rubber solids content) — do	**215.2	118.1	101.9	78.2
286933	Rubber processing chemicals (accelerators, antioxidants, blowing agents, inhibitors, peptizers, etc.) — do	(X)	33.0	(X)	25.2
286935	Plasticizers — do	*30.8	12.5	60.8	17.7

See footnotes at end of table.

Table 3. **Materials Consumed by Kind: 1987 and 1982**—Con.

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 material code	Material	1987		1982	
		Quantity[1]	Delivered cost (million dollars)	Quantity[1]	Delivered cost (million dollars)
	INDUSTRY 3052, RUBBER AND PLASTICS HOSE AND BELTING—Con.				
289501	Carbon black ..... mil lb	120.5	26.5	*106.8	33.4
281600	Inorganic pigments ..... do	(S)	2.7	**72.0	14.2
282104	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc., but excluding sheets, rods, tubes, and shapes ..... do	(S)	33.7	83.3	27.0
308007	Plastics products consumed in the form of sheets, rods, tubes, and other shapes	(X)	(D)	(X)	3.8
	Fabrics:				
220234	Cotton ..... mil lin yd	(S)	20.9	**19.3	29.6
220310	Rayon ..... do	(S)	16.0	*23.9	13.4
220314	Nylon ..... do	(S)	30.2	*15.4	25.7
220316	Polyester ..... do	(D)	(D)	**32.1	49.4
220318	Other ..... do	(S)	34.1	**11.5	19.9
331003	Steel mill shapes and forms (except castings, forgings, and steel wire) ..... 1,000 s tons	(S)	.7	(NA)	(NA)
332001	Iron and steel castings ..... do	(S)	.2	(NA)	(NA)
342986	Hose fittings and couplings	(X)	25.6	(X)	15.7
331017	Steel wire ..... 1,000 s tons	(S)	41.0	*28.1	35.1
260091	Paper and paperboard containers, including shipping sacks and other paper packaging supplies	(X)	21.9	(X)	16.9
970099	All other materials and components, parts, containers, and supplies	(X)	239.1	(X)	164.5
971000	Materials, parts, containers, and supplies, n.s.k.[2]	(X)	92.5	(X)	39.8
	INDUSTRY 3053, GASKETS, PACKING AND SEALING DEVICES				
	Materials, parts, containers, and supplies	**(X)**	**880.6**	**(X)**	**569.1**
149971	Asbestos, crude, including fiber ..... 1,000 s tons	(S)	15.4	(S)	12.7
324101	Portland cement ..... do	-	-	(D)	(D)
249941	Cork products	(X)	11.6	(X)	12.2
262190	Building paper and board	(X)	7.1	(X)	14.6
280023	Pigment, organic and inorganic ..... mil lb	(D)	(D)	17.8	2.5
282104	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc., but excluding sheets, rods, tubes, and shapes ..... do	(S)	43.4	(S)	18.9
282202	Synthetic rubber ..... do	(S)	106.3	(S)	69.7
083111	Natural rubber ..... do	(S)	23.3	(S)	2.3
306902	Fabricated rubber products, except tires, tubes, hose, belting, and gaskets	(X)	17.9	(X)	6.9
331018	Tin plate, terne plate, and black plate ..... 1,000 s tons	(S)	10.5	(S)	26.5
335002	Nonferrous metal mill shapes and forms ..... do	(S)	33.2	(S)	23.8
349012	Fabricated wire products, including springs and spring wire ..... do	(S)	12.3	(S)	7.0
970099	All other materials and components, parts, containers, and supplies	(X)	[3]387.5	(X)	[3]241.4
971000	Materials, parts, containers, and supplies, n.s.k.[2]	(X)	212.1	(X)	130.6
	INDUSTRY 3061, MOLDED, EXTRUDED, AND LATHE CUT RUBBER MECHANICAL GOODS				
	Materials, parts, containers, and supplies	**(X)**	**1 409.8**	**(NA)**	**(NA)**
	Natural rubber:				
083113	Latex (dry solids content) ..... mil lb	(S)	16.8	(NA)	(NA)
083111	Dry ..... do	*56.6	34.0	(NA)	(NA)
	Synthetic rubber:				
282201	SBR type (styrene-butadiene copolymers, including solution polymerized types) with styrene content of 50 percent or less; polybtadiens, emulsion polymerized types; and butadiene-vinylpyridine copolymers ..... mil lb	**4 232.7	53.7	(NA)	(NA)
282204	Butyl type ..... do	(S)	10.7	(NA)	(NA)
282205	Polychloroprene type ..... do	(S)	13.4	(NA)	(NA)
282206	Nitrile type (butadiene-acrylonitrile) ..... do	**13.4	12.4	(NA)	(NA)
282207	Polyisoprene type ..... do	2.9	1.8	(NA)	(NA)
282215	Ethylene-propylene type ..... do	**2 789.3	39.3	(NA)	(NA)
282208	Polyurethane ..... do	(S)	2.4	(NA)	(NA)
282217	Thermoplastic elastomers ..... do	(S)	2.3	(NA)	(NA)
282225	Other elastomers ..... do	(S)	25.5	(NA)	(NA)
306903	Reclaimed rubber, excluding "mud" and crumb or ground scrap ..... do	(S)	.4	(NA)	(NA)
306991	Rubber compounds and mixtures purchased (dry rubber solids content) ..... do	(S)	139.2	(NA)	(NA)
286933	Rubber processing chemicals (accelerators, antioxidants, blowing agents, inhibitors, peptizers, etc.)	(X)	34.2	(NA)	(NA)
286935	Plasticizers ..... mil lb	(S)	28.6	(NA)	(NA)
289501	Carbon black ..... do	(S)	40.2	(NA)	(NA)
281600	Inorganic pigments ..... do	**36.0	14.9	(NA)	(NA)
282104	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc., but excluding sheets, rods, tubes, and other ..... do	(S)	7.7	(NA)	(NA)
308007	Plastics products consumed in the form of sheets, rods, tubes, and other shapes	(X)	26.8	(NA)	(NA)
331001	Steel mill shapes and forms, except castings and forgings ..... 1,000 s tons	(S)	55.7	(NA)	(NA)
332001	Iron and steel castings ..... do	(D)	(D)	(NA)	(NA)
	Fabrics, except tire fabrics:				
220234	Cotton ..... mil lin yd	(S)	1.7	(NA)	(NA)
220314	Nylon ..... do	(S)	1.8	(NA)	(NA)
220316	Polyester ..... do	(S)	.3	(NA)	(NA)
220320	Other, including rayon ..... do	(D)	(D)	(NA)	(NA)
331017	Steel wire ..... 1,000 s tons	(D)	(D)	(NA)	(NA)
260091	Paper and paperboard containers and shipping sacks, including corrugated boxes	(X)	13.5	(NA)	(NA)

See footnotes at end of table.

Table 3. **Materials Consumed by Kind: 1987 and 1982**—Con.

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 material code	Material	1987		1982	
		Quantity[1]	Delivered cost (million dollars)	Quantity[1]	Delivered cost (million dollars)
	INDUSTRY 3061, MOLDED, EXTRUDED, AND LATHE CUT RUBBER MECHANICAL GOODS—Con.				
970099	All other materials and components, parts, containers, and supplies	(X)	483.5	(NA)	(NA)
971000	Materials, parts, containers, and supplies, n.s.k.[2]	(X)	349.0	(NA)	(NA)
	INDUSTRY 3069, FABRICATED RUBBER PRODUCTS, N.E.C.				
	Materials, parts, containers, and supplies	**(X)**	**2 373.6**	**(NA)**	**(NA)**
	Natural rubber:				
083113	Latex (dry solids content) ... mil lb	(S)	142.1	(NA)	(NA)
083111	Dry ... do	(S)	96.5	(NA)	(NA)
	Synthetic rubber:				
282201	SBR type (styrene-butadiene copolymers, including solution polymerized types) with styrene content of 50 percent or less; polybutadienes, emulsion polymerized types; and butadiene-vinylpyridine copolymers ... mil lb	(S)	184.7	(NA)	(NA)
282204	Butyl type ... do	13.9	12.5	(NA)	(NA)
282205	Polychloroprene type ... do	*28.0	33.1	(NA)	(NA)
282206	Nitrile type (butadiene-acrylonitrile) ... do	*38.7	36.7	(NA)	(NA)
282207	Polyisoprene type ... do	13.8	9.2	(NA)	(NA)
282215	Ethylene-propylene type ... do	82.5	45.2	(NA)	(NA)
282208	Polyurethane ... do	(S)	44.9	(NA)	(NA)
282217	Thermoplastic elastomers ... do	(D)	(D)	(NA)	(NA)
282225	Other elastomers ... do	(S)	26.3	(NA)	(NA)
306903	Reclaimed rubber, excluding "mud" and crumb or ground scrap ... do	49.6	13.0	(NA)	(NA)
306991	Rubber compounds and mixtures purchased (dry rubber solids content) ... do	(S)	43.9	(NA)	(NA)
286933	Rubber processing chemicals (accelerators, antioxidants, blowing agents, inhibitors, peptizers, etc.)	(X)	141.6	(NA)	(NA)
286935	Plasticizers ... mil lb	**124.3	39.3	(NA)	(NA)
289501	Carbon black ... do	(S)	74.5	(NA)	(NA)
281600	Inorganic pigments ... do	(S)	18.5	(NA)	(NA)
282104	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc., but excluding sheets, rods, tubes, and other ... do	(S)	56.2	(NA)	(NA)
308007	Plastics products consumed in the form of sheets, rods, tubes, and other shapes	(X)	20.2	(NA)	(NA)
331001	Steel mill shapes and forms, except castings and forgings ... 1,000 s tons	(S)	3.5	(NA)	(NA)
332001	Iron and steel castings ... do	(D)	(D)	(NA)	(NA)
	Fabrics, except tire fabrics:				
220234	Cotton ... mil lin yd	(S)	29.6	(NA)	(NA)
220314	Nylon ... do	(S)	24.8	(NA)	(NA)
220316	Polyester ... do	(S)	30.3	(NA)	(NA)
220320	Other, including rayon ... mil lin yd	(S)	16.6	(NA)	(NA)
331017	Steel wire ... 1,000 s tons	(D)	(D)	(NA)	(NA)
260091	Paper and paperboard containers and shipping sacks, including corrugated boxes	(X)	41.8	(NA)	(NA)
970099	All other materials and components, parts, containers, and supplies	(X)	738.7	(NA)	(NA)
971000	Materials, parts, containers, and supplies, n.s.k.[2]	(X)	404.1	(NA)	(NA)

[1]For some establishments, data have been estimated from central unit values which are based on quantity-cost relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: * 10 to 19 percent estimated; ** 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by (S).

[2]Total cost of materials of establishments that did not report detailed materials data, including establishments that were not mailed a form.

[3]Data are combined with material code 970099 to avoid disclosing data for individual companies.

APPENDIX
Scope and Coverage and Explanation of Terms

GENERAL

The 1987 Census of Manufactures is the 32nd census of manufacturing establishments conducted in the United States. For 1987, it was conducted as part of the economic censuses, which included the censuses of mineral industries, construction industries, retail and wholesale trades, service industries, selected transportation activities, and minority-owned and women-owned businesses, under authority of title 13 of the United States Code. Title 13 specifies that an economic census be conducted every 5 years to cover years ending in 2 and 7.

SCOPE AND COVERAGE

Establishment Basis of Reporting

The census of manufactures is conducted on an establishment basis. All manufacturing establishments with one paid employee or more at any time during the year are covered by the census of manufactures. Therefore, a company operating at more than one location is required to file a separate report for each location. This report excludes information for separately operated administrative offices, warehouses, garages, and other auxiliary units which service manufacturing establishments of the same company. Where these auxiliary operations are conducted at the same location as the manufacturing operation, they are usually included in the report for the operating manufacturing establishment.

Use of Administrative Records

From a universe of approximately 350,000 manufacturing establishments in the 1987 Census of Manufactures, approximately 150,000 small single-establishment companies were excused from filing reports. Selection of the small establishment nonmail cases was done on an industry-by-industry basis. A variable cutoff was used to determine those establishments for which administrative records were to be used in place of a census report. The cutoffs were selected so the administrative-record cases would account for approximately 3 percent or less of the value of shipments for the industry. These cutoffs were then adjusted so that all single-establishment companies with less than 5 employees were excluded from the mail canvass, while all establishments with more than 20 employees were included. Where establishments in the 5 to 20 employee size range were included in the mail canvass, an abbreviated census form was frequently used.

For these nonmail establishments, (and a small number of larger establishment whose reports were not received at the time the data were tabulated) data on employment, payroll, and receipts were obtained from administrative records of other government agencies rather than from census forms. The administrative-record information was then used in conjunction with industry averages to estimate the data for these establishments. The value of shipments and cost of materials were not distributed among specific products and materials but were included in the product and material "not specified by kind" (n.s.k.) categories.

EXPLANATION OF TERMS

Number of establishments and companies–A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

All employees–Includes all full-time and part-time employees on the payrolls at any time during the year. Included are all persons on paid sick leave, paid holidays, and paid vacations. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for midmonth payroll periods of March, May, August, and November.

Production workers–Includes workers up through the working-supervisor level engaged in fabricating, processing, assembling, inspecting, receiving, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial, guard services, product development, auxiliary production for plant's own use (e.g., powerplant), recordkeeping, and other closely associated services. Truckdrivers delivering ready-mixed concrete are also included in production workers.

Other employees–Includes nonproduction personnel, including those engaged in the following activities: supervision above working-supervisor level, sales (including driver/salespersons), sales delivery (truckdrivers and helpers), advertising, credit collection, installation and

servicing of own product, clerical and routine office functions, executive, purchasing, finance, legal, personnel (including cafeteria, etc.), professional, and technical employees.

Payroll–Includes the gross earnings for the "employees" defined above, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

Production-worker hours–Covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

Cost of materials–Refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuels consumed, regardless of whether they were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or generating electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

Specific materials consumed (table 3)–In addition to the total cost of materials which every establishment was required to report, information was also collected for most manufacturing industries on the consumption of major materials used in manufacturing. These inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Establishments consuming less than a specified amount (usually $10,000) of a specific material were not requested to report consumption of that material separately. Also, the cost of materials for the small establishments for which administrative records were used was estimated as "not specified by kind" (n.s.k.).

Value of shipments and other receipts–Generally refers to received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair receipts, sale of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishment from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In a few industries, the value of production or value of work completed is used instead of value of shipments. These industries are identified in the introduction and are footnoted in table 1.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, that is, including not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead and profit).

Shipments or production of individual products (table 2)–In the 1987 census, detailed shipment information was collected for approximately 11,000 individual products. These products are identified by a seven-digit code and are grouped into approximately 1,500 classes of products, which in turn are primary to 459 four-digit industries. Data at the five-digit product-class level have been collected each year as part of the annual survey of manufactures. Information at the seven-digit level, collected for many industries in the current industrial reports program, is not included in this table.

Value added by manufacture–This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacturing, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

For those industries where value of production is collected instead of value of shipments (see footnote in table 1), value added is adjusted only for the change in work-in-process inventories between the beginning and end of the year. For those industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

Value added avoids the duplication in the figure for value of shipments which results from the use of products of some establishments as materials by others. Value

added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

Expenditures for new plant and equipment–Establishments in operation and any known plants under construction were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments and (b) new machinery and equipment used for replacement and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expenses. Data for used plant and equipment will be published in the final industry bulletin.

End-of-year inventories–Comprised of (a) finished products; (b) work-in-process; and (c) materials, supplies, fuels, etc. Beginning in 1982, respondents were asked to report their inventories at (the lower of) cost or market prior to adjustment to LIFO cost. This is a change from prior years in which respondents were permitted to value their inventories using any generally accepted accounting method. Therefore, 1982 through 1987 data for inventories are not strictly comparable to prior-year data.

Specialization and coverage ratios–An establishment is classified in a particular industry if its shipments of primary products of the industry exceed in value its shipments of the products of any other single industry. An establishments' shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). The following ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in table 1 and data on product shipments shown in table 2.

Specialization ratio–Represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio–Represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments, wherever classified.